HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

ENABLING OBJECTIVES

DESCRIBE Hazardous Material Spill Response Program in accordance with OPNAVINST 5090.1, NWP 3-20.31

DESCRIBE the use of a Material Safety Data Sheet when dealing with Hazardous Material Spills in accordance with OPNAVINST 5100.19, NSTM 079 VOL 3, OPNAVINST 5090.1, NWP 3-20.31.

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Response Personnel

Because of the extremely hazardous nature of many materials used on board ship, only trained personnel shall respond to a hazardous material/hazardous waste(HM/HW) spill

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Training

Appropriate Material Safety Data Sheets (MSDS) should be reviewed by all personnel who may be required to conduct an initial response to small spills of HM/HW.

Personnel shall be trained by Department Officers or their designee in the proper procedures to contain and clean up spills.

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Response Procedure Phases

Categories

- Discovery and notification
- Initiation of action
- Evaluation
- Containment and Damage Control

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Response Procedure Phases

Categories

- Dispersion of gases/vapors
- Cleanup and decontamination
- Disposal of contaminated materials
- Certification for re-entry

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Response Procedure Phases

Categories

Follow-ups reports

NOTE: CONTAINMENT AND DAMAGE CONTROL MAY ALSO INVOLVE CLEANUP AND DISPOSAL TECHNIQUES

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

Immediately notify

Supervisory Personnel

OOD

CDO

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

Get all crew members out of area

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

When possible, the discoverer shall report the following information:

- **Time of spill discovery**
- **Location of spill**
- **Identification of spilled material**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

When possible, the discoverer shall report the following information:

- **Behavior of material (reaction observed)**
- **Source of spill (tank, container)**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

When possible, the discoverer shall report the following information:

- **Personnel in vicinity of spill (list by name and department**
- **Volume of spill**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

When possible, the discoverer shall report the following information:

- Anticipated movement of spill
- Labeling or placard information

Copy data from spilled container only after your exposure to the spill

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Spill Discovery and Notification

When a spill is discovered

The Commanding Officer shall report all overboard spills of hazardous substances as required by OPNAVINST 5090.1

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Initiation of Action

Coordination and direction of the spill response team shall be accomplished by the following:

- **OOD**
- **CDO**
- **Fire Marshal**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Initiation of Action

They shall initiate the following actions:

Evacuate all personnel from area of spill

Cordon off the affected area

Arrange first aid for injured personnel

Establish a command post and communications

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Initiation of Action

They shall initiate the following actions:

- Prevent spill from spreading
- Disperse gases or vapors to outside atmosphere IAW NSTM 074 VOL 3
- Use [illegible] (3200 cfm)

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Initiation of Action

They shall initiate the following actions:

Eliminate any fire or explosion hazards

WARNING: DO NOT ENTER CONTAMINATED AREA UNTIL NECESSARY PROTECTIVE CLOTHING IS DONNED

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Evaluation

Obtain as much information from the container label or MSDS

- **Type and concentration of the spilled material**
- **Hazardous characteristics**
  - **Ignitability**
  - **Corrosivity**
  - **Reactivity**
  - **Toxicity**
- **Health hazards of the substances (Symptoms)**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Evaluation

Obtain as much information from the container label or MSDS

Determine dangerous conditions or potential consequences

Such as:

- **Fire or explosion**
- **Presence of oxygen-deficient atmosphere**
- **Presence of toxic or explosive gases**
- **Vapors being drawn into ship’s ventilation system**
- **Other hazardous material waste in compartment**

Evaluation

Obtain as much information from the container label or MSDS

- From MSDS, obtain information concerning response equipment and protective clothing required

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Containment and Damage Control

Action taken during this phase

- **Fight fire (if any)**
- **Secure power/valves (if any)**
- **Encapsulate leaking containers into a large, liquid tight container**
- **Plug leaks in tanks**
- **Empty tank of remaining contents**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Containment and Damage Control

Predict spill movement and take further action

Secure:

- **Scuppers**
- **Deck Drains**
- **Vent Systems**
- **Doors, Hatches, and Scuttles**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

- **Dispersion of gas/vapors**
- **Removing gas/vapors**

- **Ram Fan 2000**
- **Super Vac Fan (3200 cfm)**
- **Natural Vent**
- **Exhaust Vent**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Dispersion of gas/vapors

Removing gas/vapors

WARNING: Have Gas Free Engineer check spill area for oxygen level, explosive vapors and toxic gases before dispersing gases/vapors

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Clean up and Decontamination

- **Use clean up methods recommended on MSDS**
- **Clean all areas thoroughly**
- **Decontaminate reusable clothing before returning it to storage**

INTRO TO HAZARDOUS MATERIAL SPILL RESPONSE PROCEDURES

Disposal of Contaminated Materials

- Store contaminated cleaning materials as hazardous waste until they can be dispos
- Dispose of all unusable materials IAW ship/shore hazardous material pick up procedures

Certification for Entry

Certification will be checked by the Gas Free Engineer

Follow Up Reports

The OOD/CDO shall submit a spill report to the HM/HW Coordinator and a copy to the Safety Officer

MATERIAL SAFETY DATA SHEET (MSDS)

Section 1

Information Locator Data

Manufacturer's Name

Manufacturer’s Address

Emergency Phone Number

Manufacturer’s Phone Number

Navy Stock Number

NOTE: MSDSs vary in numbers of sections depending on the manufacturer

MATERIAL SAFETY DATA SHEET (MSDS)

Section 2

Hazardous ingredients identification information

Hazardous components

MATERIAL SAFETY DATA SHEET (MSDS)

Section 3

Physical/Chemical Characteristics

- **Boiling Point**
- **Vapor PSI**
- **Vapor Density**
- **Solubility in Water**
- **Appearance/Odor**
- **Specific Gravity**
- **Melting Point**
- **Evaporation Rate**

MATERIAL SAFETY DATA SHEET (MSDS)

Section 4

Fire and Explosive Hazard Data

- **Flash Point**
- **Flammable Liquids**
  - **Lower Explosive Limit (LEL)**
  - **Upper Explosive Limit (UEL)**
- **Extinguishing Agents**
- **Firefighting Procedures**
- **Unusual Fire and Explosive Hazards**

MATERIAL SAFETY DATA SHEET (MSDS)

Section 5

Reactivity Data

- **Stability**
- **Hazardous Polymerization**
- **Incompatible Materials**
- **Hazardous Decomposition or By-Products**

MATERIAL SAFETY DATA SHEET (MSDS)

Section 6

Health Hazard Data

- **Emergency and First Aid Procedures**
- **Routes of entry into the body**
- **Health Hazard (Acute and Chronic)**
- **Signs and symptoms of exposure**
- **Medical conditions generally aggravated by exposure**

MATERIAL SAFETY DATA SHEET (MSDS)

Section 7

Precautions for safe use and handling

- **Precautions to be taken in handling and use**
- **Steps to be taken in case material is released or spilled**
- **Waste Disposal Methods**

MATERIAL SAFETY DATA SHEET (MSDS)

Section 8

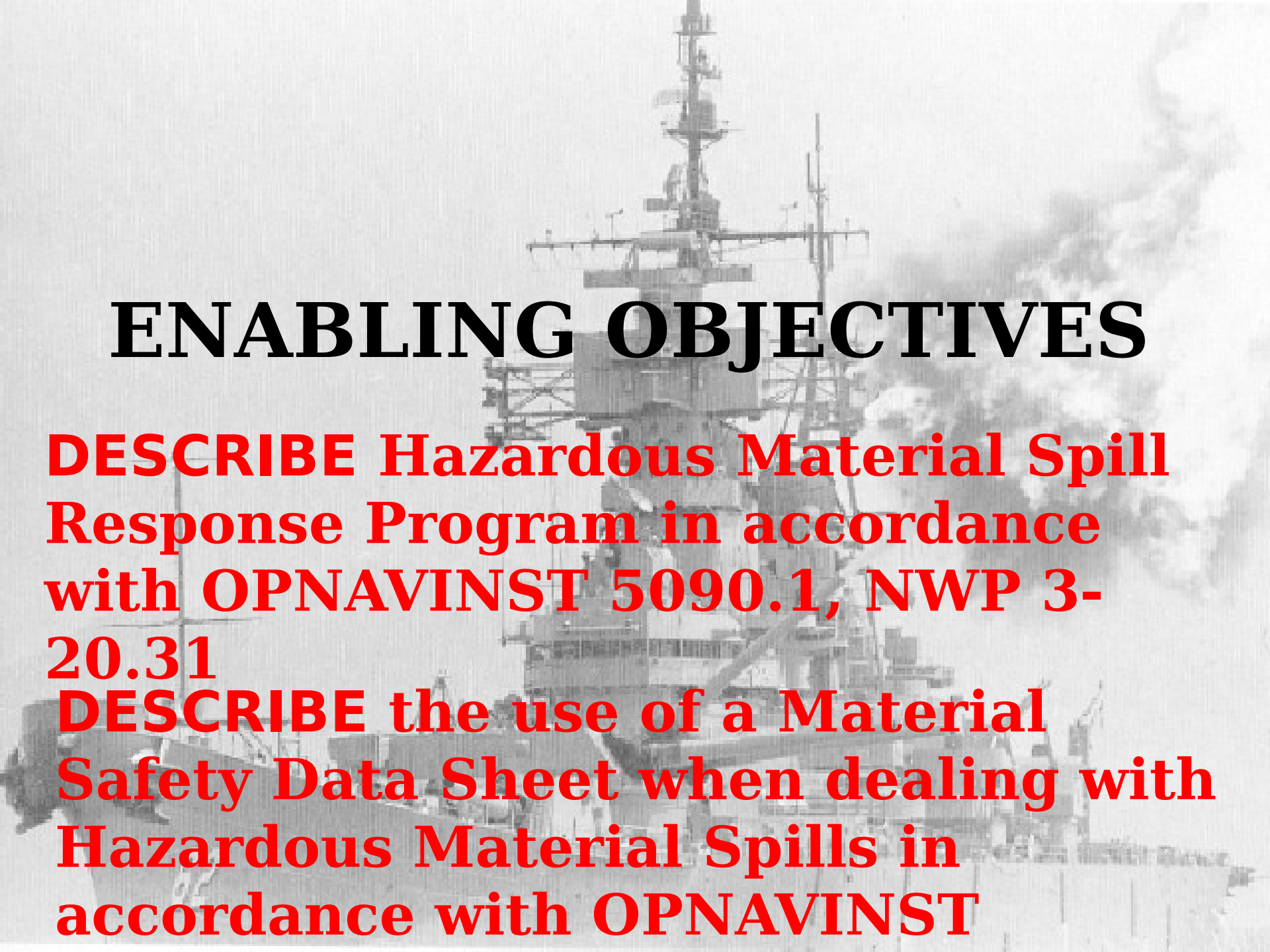
Control Measures

MATERIAL SAFETY DATA SHEET (MSDS)

Supplemental Information

Handling/Disposal

- **Respiratory Protection**
- **Ventilation**
- **Protective Clothing**
- **Eye Protection**



ENABLING OBJECTIVES

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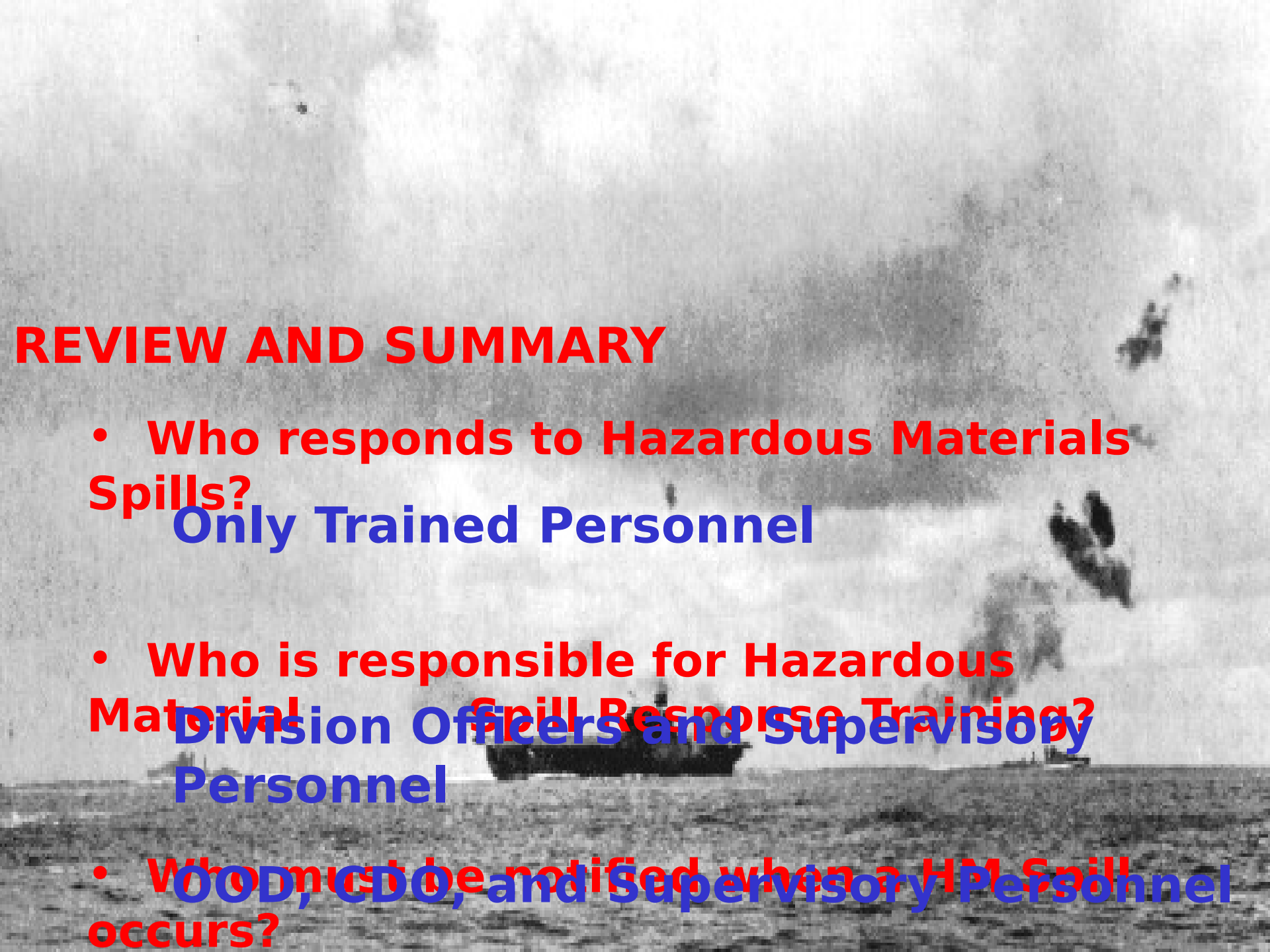


REVIEW AND SUMMARY

- Who responds to Hazardous Materials Spills?

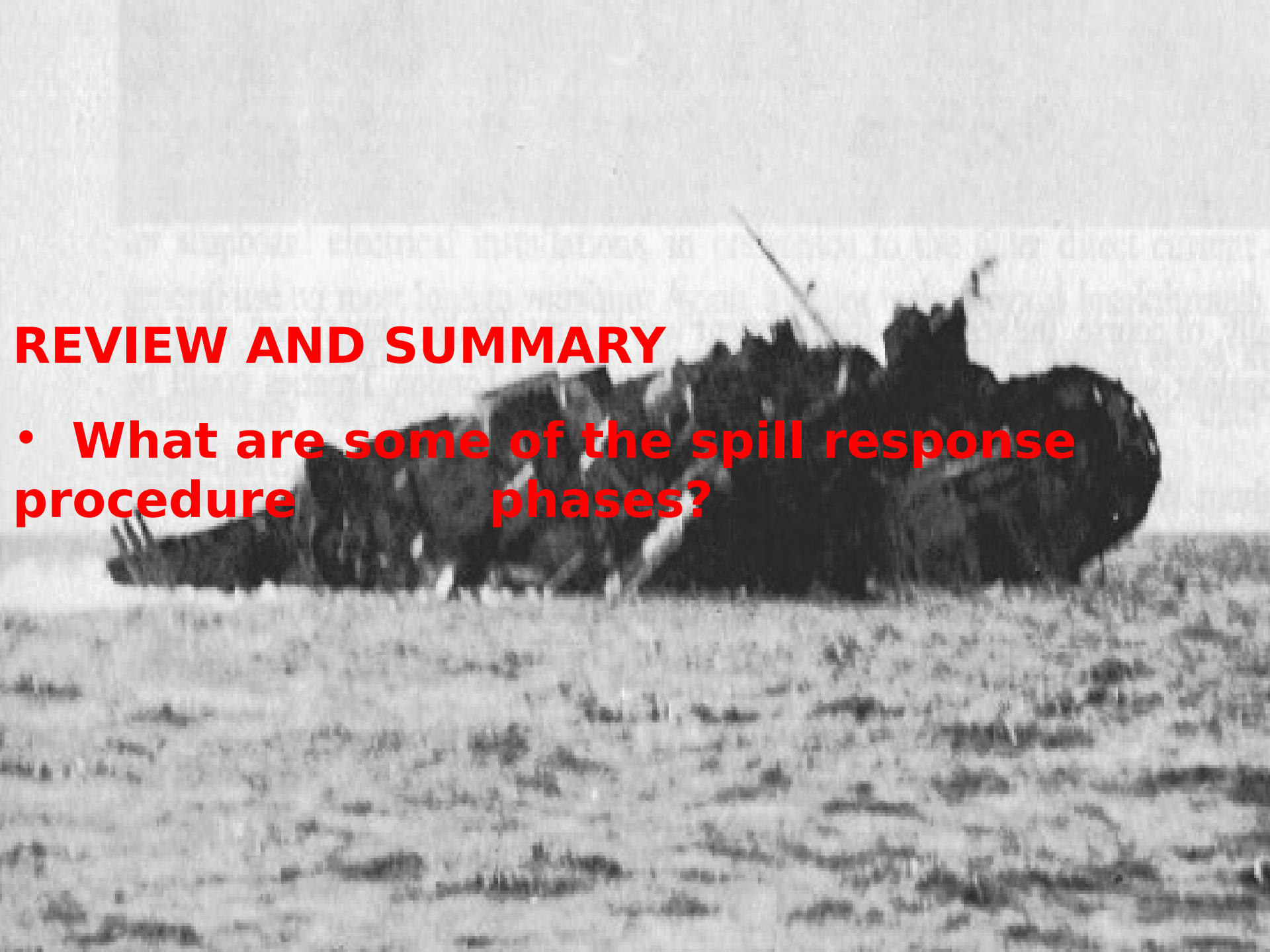
  Only Trained Personnel

- Who is responsible for Hazardous Material Spill Response Training?

  Division Officers and Supervisory Personnel

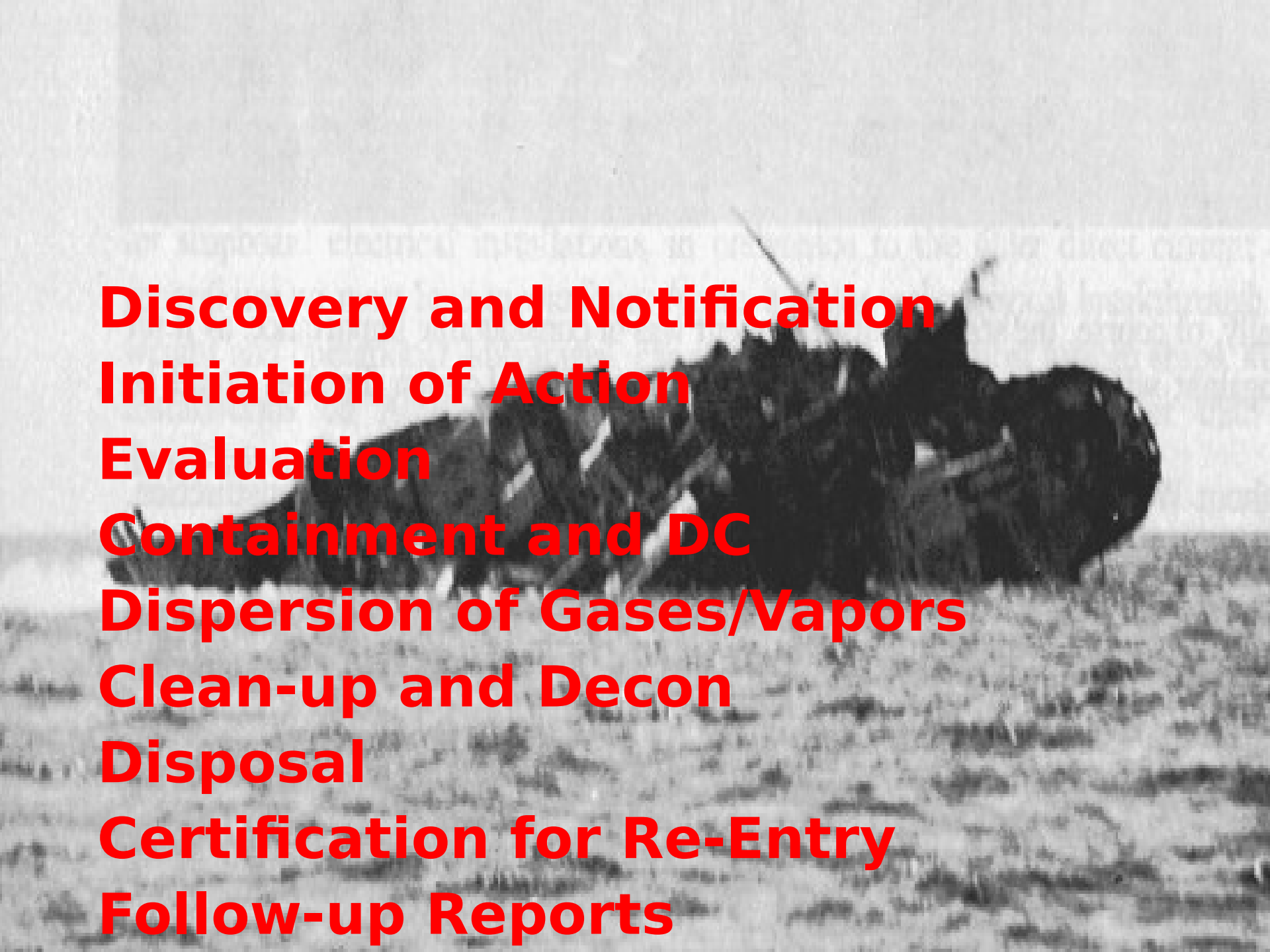
- Who must be notified when a HM Spill occurs?

  OOD, CDO, and Supervisory Personnel



REVIEW AND SUMMARY

- What are some of the spill response procedure phases?



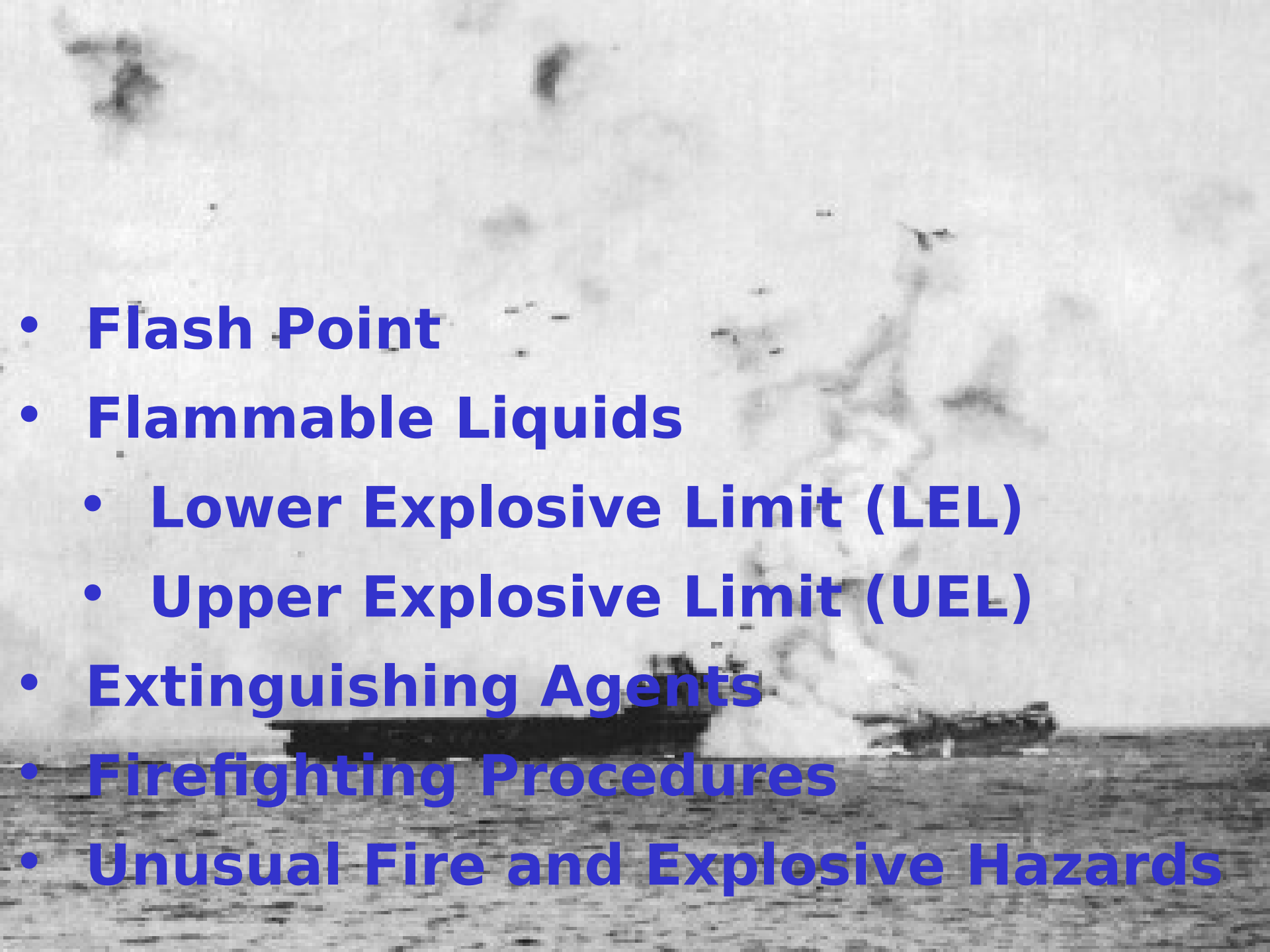
Discovery and Notification
Initiation of Action
Evaluation
Containment and DC
Dispersion of Gases/Vapors
Clean-up and Decon
Disposal
Certification for Re-Entry
Follow-up Reports

REVIEW AND SUMMARY

- **Who certifies for safe re-entry?**

  Gas Free Engineer

- **What information is found in Section 4 of the MSDS?**



- Flash Point
- Flammable Liquids
  - Lower Explosive Limit (LEL)
  - Upper Explosive Limit (UEL)
- Extinguishing Agents
- Firefighting Procedures
- Unusual Fire and Explosive Hazards

Take 10 A MINUTE
BREAK